STATE OF GEORGIA

TMDL IMPLEMENTATION PLAN FOR JACKSON LAKE

FISH CONSUMPTION GUIDELINES DUE TO PCBs

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TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies.

INTRODUCTION

Jackson Lake covers approximately 4,700 acres in the Ocmulgee River Basin and is bordered by Newton, Jasper and Butts Counties. The lake is on the 303(d) list for Fish Consumption Guidelines (FCG) due to Polychlorinated Biphenyls (PCB) contamination. The 2002 *Guidelines for Eating Fish from Georgia Waters* (Georgia Department of Natural Resources, 2002) recommends limiting consumption of Channel Catfish to one meal per week.

DISCUSSION OF POLLUTANT

The following general background on the impact of PCBs on fish consumption is taken from the U.S. EPA *Fact Sheet: PCBs Update: Impact on Fish Advisories"* (U.S. EPA).

> PCBs are a group of synthetic organic chemicals that contain 209 possible individual chlorinated biphenyl compounds. These chemically related compounds are called congeners and vary in their physical and chemical properties and toxicity. There are no known natural sources of PCBs. Although banned in the United States from further production in 1979, PCBs are distributed widely in the environment because of their persistence and widespread use. PCB mixtures found in the environment are different from the commercially produced PCB mixtures (known as Aroclors in the United States) because of differences in chemical properties, persistence, and bioaccumulation among the different

congeners. The most common analytical method used to detect PCBs in the environment is based on Aroclor analysis; however, congener-specific methods have been developed and currently are being tested. PCB exposure is associated with a wide array of adverse health effects in experimental animals. Experimental animal studies have shown toxic effects to the liver, gastrointestinal system, blood, skin, endocrine system, immune system, nervous system, and reproductive system. In addition, developmental effects and liver cancer have been reported. Skin rashes and a severe form of acne have been documented in humans; however, other effects of PCB exposure in humans are not well understood. EPA has classified PCBs as probable human carcinogens (Group B2). As of 1998, 37 States have issued 679 fish advisories for PCBs. These advisories inform the public that high concentrations of PCBs have been found in local fish at levels of public health concern. State advisories recommend either limiting or avoiding consumption of certain fish from specific waterbodies or, in some cases, from specific waterbody types (e.g., all freshwater lakes or rivers).

POLLUTANT SOURCES

There are no known natural sources of PCBs. The manufacture and use of PCBs were banned in the United States in 1977, but we can still find them in our environment. The U.S. EPA lists the following as potential sources for PCBs:

- Poorly maintained hazardous waste sites,
- Illegal/improper dumping of PCB waste such as transformer fluids,
- Leaks or releases from electrical transformers containing PCBs,
- Improper disposal of PCB-containing consumer products,
- Old microscopic oil and hydraulic fluids,
- Old televisions and refrigerators, lighting fixture, electrical devices or appliances containing PCB capacitators made before 1977, and
- Previously contaminated sediments in the bottom of lakes and rivers

PCBs have been banned, there are no new sources, and over time the levels of these contaminants are expected to decrease.

PLAN FOR TMDL IMPLEMENTATION/ MONITORING/ EDUCATION

Through the NPDES reasonable potential procedures, the Georgia Environmental Protection Division will determine whether PCB monitoring requirements or effluent limitations are necessary for the permitted dischargers to the South River watershed.

The Georgia Department of Natural Resources will continue a progressive program to evaluate problem areas and to protect public health by giving people the information they need to make decisions about eating fish from Georgia

waters. The DNR fish testing program is ongoing. Testing on additional lakes and rivers is balanced with retesting of waters where change may be occurring. Contaminant levels in fish change very slowly, and sampling the same species of fish from the same locations over time will allow the DNR to document changes and trends in contaminant levels. Information on contaminant levels is updated yearly and published in the "Guidelines for Eating Fish from Georgia Waters."

REFERENCES

U.S. EPA, 1999. *Fact Sheet: Polychlorinated Biphenyls (PCBs) Update: Impact on Fish Advisories.* USEPA Office of Water, September 1999. EPA-823-F-99-019.

Georgia Department of Natural Resources, 2002. *Guidelines for Eating Fish from Georgia Waters – 2000 Update*.